

BOOK REVIEW

Aldridge E. E. "Acoustical holography"

(1971 Merrow Publishing Co. Ltd)

"Acoustical holography" is a short (only 40 pages) survey of both the promising results and the interesting problems of the field concerned. Although acoustical holography has a past of only about a decade it has already produced a number of papers, monographs and books. But very few of these are featured in common with E. E. Aldridge's book by coverage of the whole topic without excessive mathematics which often prevents the reader from the easy understanding of the underlying physical concepts. It concentrates on reporting the results, stating the problems and pointing out existing and potential applications. Therefore the book seems to be very useful both for those wishing to get a general knowledge about acoustical holography and for those who already know the theory of holography and are interested in its practical aspects.

Important merit of the book is that it follows the development up to the end of the sixties.

The book begins with a brief history of acoustical holography and states the generally unsolved problem of imaging of acoustical waves.

The second chapter provides a simple ray theory of holography. As a consequence of the author's aim of concise treatment, the presentation serves for recalling the reader's knowledge rather than to teach him.

The main practical systems to perform acoustical holography are then described. The realizations of the principles, of liquid surface levitation and transducer scanning, working in the range of 1 to 50 MHz are outlined and compared.

Among the practical aspects of acoustical holography problems of three-dimensional imaging, effect of unwanted modes and scattering by material structure are examined.

The fifth chapter gives details on the application of acoustical holography for medical diagnostics and non-destructive testing. Also the possibility of involving digital computers in image development is risen.

The appendix gives more insight into the working principle of scanned transducer systems, the one developed in the institute the author was with.

Photos of acoustical images, illustrating the possible quality and some problems, highly contribute to the usefulness of the book.

Dr. G. Gordos

